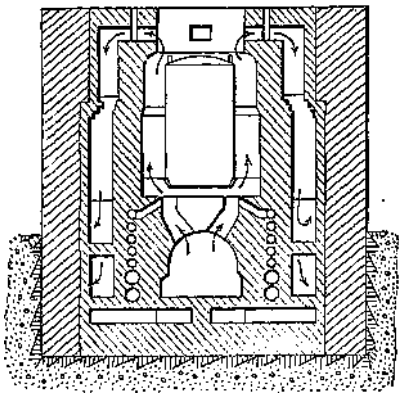
this purpose according to the Meyl system, as constructed in a works in Russia. This furnace, in spite of its complexity and high cost, was very unsatisfactory in operation. The annealing of the material was very irregular, and ultimately it became necessary to rebuild the furnace. The drawing (Fig. 101) shows clearly the cause of these poor results; the hot gases in the heating chamber rose from the gas ports at the bottom of the chamber to the waste-gas ports at its top and for this reason the iron pot in which the coils of wire were placed was not heated uniformly. Moreover, the small amount of space in the chamber did not afford the possibility for the development of the flame, a portion of the gases being chilled below their ignition temperature by the comparatively cold pot.

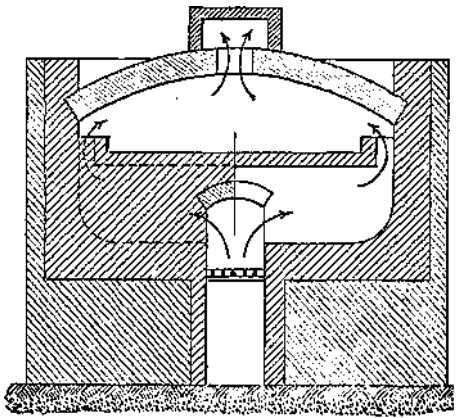


FIG, 101.

It is very evident that a furnace of this kind should be reconstructed to work upon the downdraffc principle and in addition should be furnished with a combustion chamber.

HORIZONTAL TEMPERING FURNACES

Fig. 102 shows a furnace constructed according to the Krupp system for use in the heat-treat-



ing or tempering of shells at a plant in Russia. The Krupp Company have adhered to the system of heating the material in the furnace by heat radiated from the roof. It may be seen by this ridiculous construction how far from the true

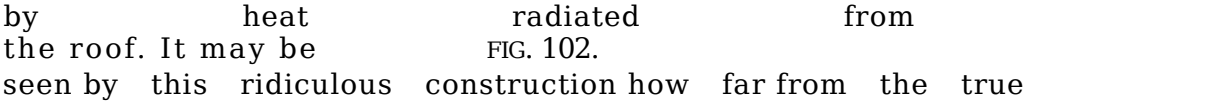


FIG. 102.